3

Index to Volume XXXIII

18f
530
19

JULY TO DECEMBER

1914

The Journal of Electricity, Power and Gas

Published by the Technical Publishing Company

San Francisco, California

TK1
.E495

Authors' Index

Arnold, E. L.....10, 33, 54
Arnold, Ralph 78
Bangsberg, O. C..... 547
Beckett, B. B..... 81
Behan, R. F..... 533
Blackstone, Richard 189
Briggs, W. W..... 161
Burger, T. E. 318
Burroughs, F. S..... 387
Butte, C. F.....208, 234
Chandler, A. E..... 289
Chodzko, A. E..... 542
Coldwell, O. B..... 455
Craig, C. C..... 503
Crawford, W. H..... 582
Cullinan, E. P..... 292
Cunningham, Ralph E..... 379
Dibble, Barry 25
Clark, J. C.....8, 57
Cutten, Chas. P.....470, 491
Dibble, Fred A..... 365
Dodson, W. D. B..... 5
Dunn, F. B.....
.....425, 454, 469, 486, 507, 530, 550
Dunn, K. G..... 285
Eastwood, John S..... 49
Finney, E. C..... 100
Flory, Chas. H..... 437
Fullerton, D. P.....60, 83
Garfias, V. R..... 78
Halloran, A. H..... 531
Hamilton, Stacy 557, 384, 387
Harris, Ford W..... 343
Henry, Geo. J..... 366
Homberger, Heinrich 528
Hunter, F. B..... 174
Jones, A. G..... 363
Joslyn, Howard 401
Kennedy, H. J..... 447
Klauber, L. M.....143,
171, 194, 228, 242, 268, 297, 315,
339, 362, 382, 408, 433, 452, 467, 490
Knowles, C. S..... 514
Koontz, John A., Jr..... 1
Lee, Geo. A..... 341
Lewis, E. St. Elmo..... 31
Lewis, John A..... 464
Loveland, H. 11
Lowenthal, Max..... 567
Marron, C. M..... 525
McBride, R. S.....376, 410
Munroe, D. B.....10, 33, 54
Newell, F. H..... 95
Nock, G. P..... 428
O'Shaughnessy, M. M..... 165
Ost, Paul J..... 333
Pearson, Benj. F..... 266
Peaslee, W. D..... 239
Percy, E. N..... 484
Phillips, Charles T..... 129
Post, F. T..... 293
Powell, A. L..... 128
Powell, R. C..... 510
Rogan, J. F..... 572
Rogers, S. C..... 570
Ross, J. D..... 55
Ryan, J. F..... 554
Sanders, O..... 546
Scattergood, E. F..... 578
Scott, W. D..... 428
Scrugham, J. G..... 291
Sessions, H. N..... 571
Shepard, W. M..... 129
Solomon, I. R..... 575
Stocker, H. J..... 578
Strout, Gale S..... 4
Uhden, C. F..... 213
Van Den Heuvel, William..... 121
Vance, Champ S..... 263
Vincent, W. G., Jr..... 403
Voss, A. N..... 291
Warner, Chas. E.....388, 504, 578, 581
Weber, F. D.....183, 244, 271
Wells, H. S..... 265
West, E. A..... 102
White, J. L..... 553
Wilson, G. O.....71, 104, 126, 148, 224

Index to Volume XXXIII

Illustrated articles are designated by an asterisk (*), editorial by dagger (†), and industrials by double dagger (‡).

Page

A

Accounting, Cost 455
†Accounting, Utility Cost 324
†Action, Faith In 441
Adamson Bill, The 155
Advertising Electricity at Rosario 493
Agent, The Doctrine of Principal and 177
‡Air Heater, El Radio, New Luminous 304
Alameda County Electrical Development League 113, 232, 395, 442, 536
Alkaline Storage Battery 572
‡*All-Night Lamps, Miniature Transformer for 372
†All, Room for 255
Aluminum Nitrade 342
*A. I. E. E. and N. W. E. L. & P. A. Convention 272, 323
A. I. E. E., Southern California Section of the 348, 558
A. I. E. E. and the N. E. L. A., Portland, Oregon, Joint Meeting of the 371, 418, 537
A. I. E. E. and N. W. Electric Light and Power Association, Pacific Coast Convention 113, 206
†A. I. E. E. District Representation 535
A. I. E. E. Meeting, San Francisco 1915 583
A. I. E. E., San Francisco Section 300
A. I. E. E., Seattle Section 370, 418
A. I. E. E. Standardization Rules 85
*American District Telegraph Co., New Portland Station of 525
American Railway Association, Code of Principles Adopted by 455
American Society of Mechanical Engineers, Los Angeles Section of 459
American Society Mechanical Engineers, San Francisco Section 518
*Amusement Park Lighting 128
‡An Electrical Christmas 421
‡*An Electric Semaphore 522
*Analysis of Arch Dam Stresses 4
Anniversary of Electric Lighting, Thirty-fifth 349
†Another Record-Breaker 14
Answer to Col. H. D. Loveland 79
Antioch Rate Case 38
†Antiquity of Irrigation 556
Apparatus, Horse-Drawn Fire 289
†Appeal, The Court of 368
Appeal for Fair Play by New Haven R. R. 453
Appliance Sale by Utah Light and Railway Company 7
Appliances, Gas, Exhibits of at P. P. I. E. 444
Application of Electric Motors to Gold Dredges 275
†Applied Knowledge 62
"Appropriator" of Water, An 132
Aqueduct Mistakes, Los Angeles 388
Aqueduct Mistakes, Los Angeles, Letter to the Editor On 435, 577
Aqueduct Water Rights 513
*Arc Lamp Photometry 343, 569
*Arch Dam Stresses, Analysis of 4
*Arch Illumination at Portland 503
Arizona Corporation Commission 19, 115, 181, 257, 350, 561
Arrow Rock Reservoir, Power Outlook at 226
Association, Electric Vehicle 43
Association of Electrical Contractors' Convention, California 65, 519, 537
Association, Pacific Claim Agents' 89
Association, Telluride 65
Association, The Southwestern Electrical and Gas 113
Association, Utah Electric Show 65
Atom, Structure of 515
Atomizing Oil, Steam for 11
*Automatic Electric Operation of Oil Wells 75
†Automobile Bus 556
Automobile Headlights 510

B

†Balance of Power, The 276
Bangkok, Siam, Municipal Power Plant at 531
Batteries, Storage 571
‡*Bees, The Mazda 352
Belt, The Steel 201
†Benefits of Neutrality, The 202
‡*Benjamin Sockets for Type "C" Mazda Lamps 139
‡*Berkeley Electric Cooker 500
Bill, The Adamson 155
Bill, The Ferris 226
Blueprints, Photographing 229
Boiler Explosions, Steam 345
Boiler Troubles, A Cure For 548
Boilers, Hand-Fired 267
"Boilers, Oil Fuel for Steam" 18
†Boilers, Treating 557
Book Reviews 18, 181, 282, 444, 479, 520
Boss, The Job, The Man, The 18
Boxes and Plates in Knob and Tube Construction, Outlet 138
Brass and Bronze 367
Brass-Making Furnaces, Electric 100
‡*Brass Shell Sockets, Push Button Operated 22
†Breaker, Another Record 14
British Columbia Association of Electrical Inspectors, Section N. A. E. I. 159
Bronze, Brass and 367
‡Bryant Switch, A New 282
Buckhorn Locomobile Power Plant, The 291
Bureau, Mazda Publicity 205
Bureau of Mines, P. P. I. E. Exhibit 201
†Business Creator, The Jobber as a 325
Business, Development of State 582
†Business Easements 255
Business in the Pacific Northwest 176
‡*Button Operated Brass Shell Sockets, Push 22

C

*Cable, Laying the Largest Submarine Power 1
‡Caddy Call, A New 184
*California and Egypt 542
California Association of Electrical Contractors' Convention 65, 519, 537
California Association of Electrical Inspectors, Section of N. A. E. I. 20, 45, 90, 499, 521, 563
California Cities, Mazda Bureau Active in 328
California Cities, Rate Regulation in 473
California Oil, Pumping 104
California-Oregon Electric Club 587
California Railroad Commission, News of 19, 44, 68, 91, 115, 159, 181, 233, 257, 280, 301, 328, 350, 393, 419, 443, 460, 478, 497, 519, 562
‡*California State Fair, Lighting at the 304
‡California State Fair, Mazda Exhibit at 304
California, The Metal Output of 201
California's Hydroelectric Power 168
‡Call, A New Caddy 184
Campaign, Electric Flat Iron 265
Campaign, Residence Service 2
†Campaign, The Fall Lighting 231
Canadian Water-Power Exhibit, A 155
Canal Transportation Telephone System 485
Canal, Time Saved by the Panama 342
Canal Toll, Panama 77
Canals, Gate Structures for Irrigation 85
Cannon, Mexican Turbine-Runner 54
†Capitalization of Good Will 15
Car, An Electrically Equipped Hospital 79
Car, Diesel Electric 473
Car, Traction Resistance of Electric 33
Car Travel, The Cost of Gasoline 80
Case, Antioch Rate 38
Cash Investment of the Railways During Six Years 52
Cast Iron Pipe, Corrosion of 389
Cathode Copper, Melting of 198
*Central Fire Alarm System, Seattle's 401
Central Station, Co-Operation With Contactor and Dealer 161
Central Station, Relation of the Electrical Contractor to the 553
‡*Century Motor, New 352
*Chandelier Installation 129
Chemical Gaging of Water Discharge 292
China, Electrical Standardization in 155
Chinese Electric Light Plants 275
†Christmas, An Electrical 535
‡Christmas, An Electrical 421
Cities, Rate Regulation in California 473
Claim Agents' Association, Pacific 89
Claim Agents' Convention, Pacific 65
‡*Clamp, New 522
Classifications, Correspondence Filing 151, 177, 197, 229, 248
Club, Electric Power 43
Club, Utah Electric 349, 419, 496
Code at Portland, New Electrical 90
Code of Principles, Adopted by American Railway Association 455
Collier Jupiter 453
Commission, Arizona Corporation 19, 115, 181, 257, 350, 561
Commission, News of California Railroad 19, 44, 68, 91, 115, 159, 181, 233, 257, 280, 301, 328, 350, 393, 419, 443, 460, 478, 497, 519, 562
Commission, News of Idaho Public Utilities 181, 301, 393, 419, 460, 497, 520, 561
Commission, News of Oregon Railroad 19, 233, 460, 497, 561
Commission, News of Washington Public Service 207, 280, 301, 350, 443, 478
Commission Report, Oregon Hydroelectric 5
†Commissioners, Engineering 517
Commissions Regard Utilities, How 11
Commission's Request for Foreign Hydroelectric Data, The Oregon Hydroelectric 168
Committee, San Francisco N. E. L. A. Convention 180
Comparison of Rate Theories, A Resume and 357, 384
Comparison of Steam and Diesel Units 169
‡Compensators, Torque 396
Conference, Oregon Hydroelectric 581
†Confidence, Destroying 368
Connections, Efficiency on Transformer Wave Shapes 273
†Connections, Service 137
Conservation of Western Water Power Resources 555
Constitutionality of the Idaho Public Utility Law, The 58
Constitutionality of the Oregon Water Code, The 409
Constitutionality of the 1913 Nevada Irrigation Act 289
Construction, Outlet Boxes and Plates in Knob and Tube 138
*Constructional Features, P. P. I. E. Engineering 307
Continuous Sustained Sounds 85
Contracting, Elements of Successful 208, 234
Contractors and Dealer's Co-operation With the Central Stations 161
*Contractor, Figuring Profits for 531
Contractors' Convention at Sacramento 114
*Contractors' Convention at Sacramento 160
Contractors' Department, Electrical 66, 114, 160, 208, 234
Contractors' Notes, Electrical 20, 45, 67
Contractors, Salt Lake City Electrical 113
‡*Contractors' Sample Room 351
Contractors, Seattle Would License Electrical 182
Control, Electrolytic Hoist 292
†Control, Federal Versus State 178
*Convention, A. I. E. E. and N. W. E. L. and P. A. 272, 323
Convention A. I. E. E. and N. W. Electric Light & Power Association, Pacific Coast 113, 206
Convention at Sacramento, Contractors' 114
*Convention at Sacramento, Contractors' 160
Convention, California Association of Electrical Contractors' 65
Convention Committee, San Francisco N. E. L. A. 180
Convention Electric Vehicle Association, National 327
Convention Illuminating Engineering Society 279
Convention, Pacific Claim Agents' 65
Convention, Pacific Coast Gas Association 206, 302
Convention, Registration at Spokane 278
†Conventions, The Exposition Technical 324
Conventions, The Meeting of, at San Francisco 381
‡*Cooker, Berkeley Electric 500
Cooking, Cost of Electric 155
*Cooking, Gas vs. Electricity for 510
†Cooking Load, Electric 516
†Co-operation, The Fruit of 390

Page

Co-operating With the Electrical Engineer 174
Co-operation Between Electrical Contractors and Jobbers..... 66
Co-operation With the Central Stations by Contractor and Dealer 161
*Co-operative Rate-Making Schedules 121
Copper, Melting of Cathode..... 198
*Corona Pumping Plant 567
Corporation Commission, Arizona "Corporation Commission, Arizona" 181
Corporation Commission, News of Arizona 115, 257
Corporations, Public Policy of Public Utility.....60, 83, 341
Correspondence Filing Classifications.....151, 177, 197, 229, 248
Corrosion of Cast Iron Pipe.... 389
Cost Accounting..... 455
†Cost Accounting, Utility..... 324
Cost Data, Criticism of Seattle Lighting Department..... 131
Cost Data, Hydroelectric..... 55
†Cost Finding..... 440
Cost of Electric Cooking..... 155
Cost of Gasoline Car Travel, The 80
Cottrell Process, The..... 196
†Court of Appeal, The..... 368
Creative Sales Work by Jobbers 318
†Creator, The Jobber as a Business 325
Criticism of Seattle Lighting Department Cost Data..... 131
Cure for Boiler Troubles..... 548

D

*Dam Stresses, Analysis of Arch.. 4
*Dam, The Eastwood Multiple-Arched 49
Data, Criticism of Seattle Lighting Department Cost..... 131
Data, Hydroelectric Cost..... 55
Data, The Oregon Hydroelectric Commission's Request for Foreign Hydroelectric..... 168
Decision, Monterey Gas..... 34
†Definition of a Public Utility.... 475
Delivery Vans, Motor..... 265
*Demonstrations, Electrical..10, 33, 54
Denatured Electricity..... 101
Density of Oil, The..... 5
Department, Electrical Contractors' 66, 114, 160, 208, 234
Department of Electricity, Ruling of San Francisco..... 371
Department of Electricity, Ruling of San Francisco..... 68
Deposits, Meter..... 510
†Depreciation 416
†Destroying Confidence..... 368
*Development of Oregon's Water Resources 464
Development of State Business.. 582
Developments on Public Lands in Relation to Irrigation, Hydroelectric 100
Diesel Engine Installations, Reume of..... 133
*Diesel Engine Irrigation Plant.. 567
†District Representation..... 535
Diesel Electric Car..... 473
†Diesel Engine Marine Possibilities 136
Diesel Engine, The..... 59
Diesel Units, Comparison of Steam and..... 169
"Directory of Directors, Walker's Manual of California Securities and" 282
Discussion of Rate Theories..... 387
†Dishonest Engineers, Mentally.. 40
*Distribution Standards in San Diego, Electric.....143, 171, 194, 228, 242, 268, 297, 315, 339, 362, 382, 408, 433, 452, 467, 490
Distribution System for Power Purposes 274
Doctrine of Principal and Agent, The 177
Double Trolley System of Seattle Municipal Railways..... 493
*Drying Plants, Paper Pipes for.. 515
*Drainage Project, The Wapato Lake 239
Dredges, Application of Motors to Gold 275
Duplication by Municipal Utilities 341

E

Earth, Infusorial..... 131
†Easements, Business..... 255
*Eastwood Multiple-Arched Dam, The 49
Economy in Operation of 55,000 Volt Insulators..... 275
†Economy of Effectiveness, The... 179
Edison Storage Battery 572
Editor, Letters to the..... .....79, 106, 131, 320
Effect of Connections on Transformer Wave Shapes..... 273

Page

†Effect, What Is the..... 254
†Effectiveness, The Economy of.. 179
Efficiency Engineering for a Power Company..... 102
Efficiency, Net..... 266
Efficiency of Water Wheels..... 551
†Efficiency Standards..... 299
Efficiency of the Engineer..... 551
Efficient Power Plant Management....102, 151, 177, 197, 229, 248
*Egypt and California..... 542
†Eight-Hour Labor Law..... 137
†Election Results..... 456
†Election Results in the Northwest 495
Electric Brass-Making Furnaces. 100
Electric Car, Traction Resistance of 33
Electric Cooking, Cost of..... 155
†Electric Cooking Load..... 516
*Electric Distribution Standards in San Diego.....143, 171, 194, 228, 242, 268, 297, 315, 330, 362, 382, 408, 433, 452, 467, 490
Electric Flat Iron Campaign.... 265
*Electric Floats at Portland..... 52
Electric Furnace for Melting Cathode Copper..... 198
*Electric Headlights..... 363
Electric Lamps for Oil Well.... 270
Electric Lamps, Portable..... 74
Electric Light Plants, Chinese... 275
Electric Lighting, Thirty-fifth Anniversary of..... 349
Electric Milkers..... 226
"Electric Motors"..... 282
*Electric Operation of Oil Wells, Automatic 75
†Electric Plowing..... 87
Electric Power Club..... 43
Electric Power on the Witwatersrand 170
Electric Production of Ferro-Manganese 342
Electric Propulsion..... 468
Electric Pumping of Oil Wells.. 78
*Electric Railway Extensions, San Diego 285
Electric Service, Selling..... 31
Electric Show Association, Utah 65
Electric Sign Ordinance at Salt Lake City..... 90
Electric Truck for Repair Work. 367
Electric Vehicle Association..... 43
Electric Vehicle Association of America, Los Angeles Section of the.....348, 558
Electric Vehicle Association, National Convention..... 327
Electric Vehicle Association of America, San Francisco Section 301
Electric Welding..... 32
Electrical Business and the Electrical Contractor From the Viewpoint of the Jobber..... 554
†Electrical Christmas..... 535
Electrical Code at Portland, New 90
Electrical Congress Postponed, International 371
Electrical Contractor and the Electrical Business From the Standpoint of the Jobber..... 554
Electrical Contractors and Jobbers, Co-operation Between... 66
Electrical Contractors, National Convention 20
Electrical Contractors' Notes... .....20, 45, 67, 443
Electrical Contractors' Convention, California Association of 65, 519, 537
Electrical Contractors' Department.....66, 114, 160, 208, 234, 443
Electrical Contractor, Relation of to the Central Station..... 553
Electrical Contractors, Salt Lake City 113
Electrical Contractors, Seattle Would License..... 182
Electrical Deficiencies, Key to... .....244, 271
*Electrical Demonstrations..10, 33, 54
Electrical Development League, Alameda County..... .....113, 232, 395,442, 536
Electrical Development and Jovian League of San Francisco. 232, 300, 327, 349, 563
Electrical Engineer, Co-operating With the..... 174
Electrical Exposition, The International 148
Electrical Farm, An..... 314
Electrical Gas Purification..... 407
Electrical Industry and the War. 290
Electrical Inspectors—Section N. A. E. I., British Columbia Association of..... 159
Electrical Irrigation in Utah.... 39
Electrical Men Enjoy Movies.... 205
Electrical Operators..... 547
Electrical Ordinances, Oregon... 45
Electrical Pageant at Salt Lake City 233
‡*Electrical Repair Shop, A Modern 21
Electrical Resistance Ceases..... 361

Page

Electrical Safety Rules..... 199
Electrical Seasoning of Timber.. 77
Electrical Standardization in China 155
Electrical Stimulation of Plant Growth 155
Electrical Supply Jobbers' Meeting 318, 536
*Electrical Transmission, History of 71, 104, 126, 148
Electrically Equipped Hospital Car, An..... 79
"Electricians' Wiring Manual".. 18
Electricity, Advertising at Rosario 493
Electricity, Denatured..... 101
Electricity in Lumber Industry.. 274
Electricity, Ruling San Francisco Department of..... 68
*Electricity vs. Gas for Cooking.. 510
Electrolytic Hoist Control..... 292
Electrolytic Iron..... 549
Elements of Successful Contracting 208, 234
Elimination of Metallic Resistance, The..... 155
‡El Radio, New Luminous Air Heater 304
Enemies, Public..... 342
Engine Installations, Resume of Diesel 133
†Engine Marine Possibilities, Diesel 136
Engine, The Diesel..... 59
Engineer, Co-operating With the Electrical 174
Engineer, Efficiency to the..... 551
Engineer, Examination for Junior 184
Engineers' Club of San Francisco 89, 232, 279, 327, 442
Engineers, Utah Society of..... 518
†Engineering Commissioners..... 517
Engineering Congress, International 393, 459
*Engineering Constructional Features, P. P. I. E..... 307
Engineering for a Power Company, Efficiency..... 102
†Engineering Honesty..... 62
†Engineers, Mentally Dishonest.. 40
Engineers, Oregon Society..... .....327, 348, 370, 419, 443, 459, 496, 518, 536, 558
‡Equipment, Novel Hydro-Pneumatic 282
*Errors in Power Measurements Due to Instrument Transformers 129
Estimating Sheet, Suggestions for 395
Ethics of the Telephone, Some... 303
Ethics, Public Utility..... 456
†Evils of Price Cutting 585
Examination for Hydroelectrical Engineer 478
Examination for Junior Engineer 184
Exercises, Nevada's Safety First Labor Day..... 256
Exhibit, A Canadian Water-Power 155
‡Exhibit at California State Fair, Mazda 304
Exhibit, Bureau of Mines, P. P. I. E..... 201
*Exhibit, First P. P. I. E..... 249
Exhibit, The U. S. Government.. 104
Exhibits, P. P. I. E. Machinery... .....59, 249
*Experiments With Sustained High Frequency High-Voltage. 57
Experts Wanted, Radio..... 139
Explosions, Steam Boiler..... 345
†Exposition Technical Conventions, The 324
Exposition, The International Electrical 148
*Extensions, San Diego Electric Railway 285
Electrical Contractors' Association, Oregon..... 518
Electrical Inspectors, Section of N. A. E. I., California Association of.....20, 45, 90, 499, 521
Engineering Purposes, Use of Moving Pictures for..... 484
‡*Factory at Portland, Modern Fixture 183
Facts for Settlers..... 436

F

‡*Fair, Lighting at the California State 304
‡Fair, Mazda Exhibit at California State 304
†Faith in Action..... 441
†Fall Lighting Campaign, The.... 231
Farm, An Electrical..... 314
†Federal Versus State Control.... 178
Feldspar, Potash From..... 409
Ferris Bill, The..... 226
Ferro-Manganese, Electric Production of..... 342
*Fire Alarm System, Seattle's Contral 401
*Fires, The Telephone Plant With Relation to..... 428
*Field Meet, Nevada..... 281

Page

Field Meet, Nevada First Aid and Mine Rescue ... 180
*Figuring Profits for the Contractor ... 531
Filing Classifications, Correspondence ... 151, 177, 197, 229, 248
Fire Apparatus, Horse-Drawn ... 289
First Aid and Mine Rescue Field Meet, Nevada ... 180
First Oil Motor Ship, The ... 131
*First P. P. I. E. Exhibit ... 249
‡*Fixture Factory at Portland, Modern ... 183
Flat Iron Campaign, Electric ... 265
*Floats at Portland, Electric ... 52
Foreign Hydroelectric Data, The Oregon Hydroelectric Commission's Request for ... 168
Foreign Participation, Increased P. P. I. E. ... 302
Forests, National, The Purposes of and Their Protection ... 437
†Franchise, The Indeterminate ... 391
Freight Haulage, A World's Record in ... 168
*Frequency, A Laboratory Source of Sustained High Voltage at High ... 8
†Fruit of Co-operation ... 390
"Fuel for Steam Boilers, Oil" ... 18
*Fuel Oil, Industrial Uses of ... 425, 454, 469, 486, 507, 530, 550
Fuel Oil Strainers ... 13
Furnace for Melting Cathode Copper, Electric ... 198
Furnaces, Electric Brass-Making 100
†Futility of Water Utilization, The 178

G

Gaging of Water Discharge, Chemical ... 292
Gas, The Total Heating Value of a 407
Gas Decision, Monterey ... 34
Gas Exhibit, P. P. I. E. ... 444
*Gas Exhibit, P. P. I. E. ... 484
Gas From Wood, Producer ... 472
*Gas Industry, Progress in the ... 263
Gas Industry, The ... 150
Gas Purification, Electrical ... 407
†Gas Service, Standards for ... 390
*Gas Service, Standards for in the West ... 376, 410
*Gas vs. Electricity for Cooking ... 510
Gas-Testing, Standard Methods of 292
Gasoline Car Travel, The Cost of 80
Gate Structures for Irrigation Canals ... 85
General Convention Committee, N. E. L. A. ... 89
Geological Survey, U. S., Work in Oregon ... 389
†George Bill ... 417
Germany's Two Greatest Electric Manufacturing Companies ... 265
†Giving Thanks ... 494
Gold Dredges, Application of Motors to ... 275
†Good Will, Capitalization of ... 15
Government Exhibit, The U. S. ...
Government Suit, Utah Company Loses ... 39
Grounding Secondaries, Oregon Underwriters' Bureau on ... 182
Grounding the Neutral of Low Voltage Systems ... 45
Growth, Electrical Stimulation of Plant ... 155

H

Hand-Fired Boilers ... 267
Haulage, A World's Record in Freight ... 168
Headlights, Automobile ... 510
Headlights, Electric ... 363
‡Heater, El Radio, New Luminous Air ... 304
Heating Value of a Gas, The Total 407
*High-Frequency High-Voltage, Experiments With Sustained ... 57
*High Voltage at High Frequency, A Laboratory Source of Sustained ... 8
*High Voltage Transformers, Installation of ... 514
*History of Electrical Transmission ... 71, 104, 126, 148
Hoist Control, Electrolytic ... 292
†Home Rule, Utility ... 369
*Homestake Hydroelectric Power Plant ... 189
†Honesty, Engineering ... 62
Horse-Drawn Fire Apparatus ... 289
Hospital Car, An Electrically Equipped ... 79
How Can the Contractor and Dealer Co-operate With the Central Stations? ... 161
How Commissions Regard Utilities ... 11
How to Get a Job ... 365
How to Remember the Wire Table 434
Hydroelectric Commission Report, Oregon ... 5

Page

Hydroelectric Commission's Request for Foreign Hydroelectric Data, The Oregon ... 168
Hydroelectric Conference, Oregon 537
Hydroelectric Conference, Oregon 581
Hydroelectric Cost Data ... 55
Hydroelectric Developments on Public Lands in Relation to Irrigation ... 100
Hydroelectric Plants of Japan ... 150
Hydroelectric Problem in Oregon. 581
Hydroelectric Power, California's 168
*Hydroelectric Power Plant, Homestake ... 189
Hydroelectric Power Plants, Municipal Ownership of ... 528
Hydroelectric Power Plants, Municipal Ownership Of ... 578
‡Hydro-Pneumatic Equipment, Novel ... 282

I

Idaho, Opposition to Rulings on Overhead Line Construction ... 559
Idaho, Phosphates in ... 345
Idaho Public Utilities Commission, News of ... 181, 301, 393, 419, 460, 497, 520, 561
Idaho Public Utilities Law, The Constitutionality of the ... 58
†Ideal Specification, The Injury of the ... 156
Illuminating Engineering Society 89
Illuminating Engineering Society Convention ... 279
Index of Electrical Deficiencies ... 244, 271
†Indeterminate Franchise ... 391
†Inductive Interference ... 417
Inductive Interference, Report on 320
Inductive Interference, Letter on 414
Inductive Interference, Letter on 546
Inductive Interference, Report on ... 250, 269
†Industrial Opportunities, Our ... 391
*Industrial Uses of Fuel Oil ... 425, 454, 469, 486, 507, 530, 550
Industry and the War, Electrical 290
*Industry, Progress in the Gas ... 263
Industry, The Gas ... 150
†Inefficiency, Police ... 557
Infusorial Earth ... 131
†Inductive Interference, Neutralizing ... 475
†Injury of the Ideal Specification, The ... 156
*Installation, Chandelier ... 129
*Installation of High Voltage Transformers ... 514
Installations, Resume of Diesel Engine ... 133
*Instrument Transformers, Errors in Power Measurements Due to 129
‡*Instrument Transformers, New Weston ... 258
‡*Insulator Switch, A New Strain. 329
Insulators, Economy in Operation of 55,000 Volt ... 275
†Interference, Inductive, Neutralizing ... 475
†Interference, Inductive ... 417
Interference, Report on Inductive ... 250, 269
International Electrical Congress Postponed ... 371
International Electrical Exposition, The ... 148
International Engineering Congress ... 393, 459
Investment of the Railways During Six Years, Cash ... 52
Iron, Electrolytic ... 549
Iron Campaign, Electric Flat ... 265
Iron, The Magnetic Quality of .. 54
Iron Were Non-Magnetic, If ... 198
Irrigation Act, Constitutionality of the 1913 Nevada ... 289
†Irrigation, Antiquity of ... 556
Irrigation Canals, Gate Structures for ... 85
Irrigation Congress, Oregon ... 518
†Irrigation Districts ... 456
Irrigation, Hydroelectric Developments on Public Lands in Relation to ... 100
Irrigation in Utah, Electrical ... 39
*Irrigation Manager and His Legal Problems ... 95
*Irrigation Plant, Diesel Engine .. 567
Irrigation, The Waste of Water in 104

J

Japan, Hydroelectric Plants of .. 150
‡*Japan, Testing Transformers Shipped to ... 258
†"Jitney" Bus ... 556
Job, How to Get a ... 365
"Job, The Man, The Boss, The" .. 18
†Jobber as a Business Creator, The 325
Jobbers, Co-operation Between Contractors and ... 66
Jobber, His Viewpoint of the Electrical Contractor and His Relation to the Electrical Business. 553

Page

Jobbers, Creative Sales Work by 318
Jobbers' Meeting, Electrical Supply ... 318, 536, 587
Joint Meeting of the A. I. E. E. and the N. E. I. A., Portland, Oregon ... 371, 418, 537
Joint Pole Commission, Portland, Oregon ... 349
‡*Journey, A Mazda ... 372
Jovian Electrical League of Southern California. 16, 232, 301, 327, 349, 370, 459, 497, 518, 537, 559
Jovian League of San Francisco, Electrical Development and ... 232, 300, 327, 349
Jovian League, Sacramento .. 300, 326
"Jovian Order, Roster of the" ... 113
Jovian Rejuvenation ... 161
Jovians, San Francisco ... 279
Junior Engineer, Examination for 184
Jupiter, The Collier ... 453

K

*Key City Light and Power Company ... 355
Key to the Index of Electrical Deficiencies ... 244, 271
Kite Wire Telephone, A ... 32
‡*Klein & Sons' New Plant, Mathias 117
Knob and Tube Construction, Outlet Boxes and Plates in 138
†Knowledge, Applied ... 62

L

Labor Day Exercises, Nevada's Safety First ... 256
†Labor Law, Eight-Hour ... 137
*Laboratory Source of Sustained High Voltage at High Frequency, A ... 8
*Lamp Photometry, Arc ... 343, 569
Lamp, The Nitrogen ... 342
‡*Lamps, Benjamin Sockets for Type "C" Mazda ... 139
Lamps for Oil Well, Electric 270
‡*Lamps, Miniature Transformer for All-Night ... 372
‡*Lamps, New High Efficiency Mazda, Reflectors for ... 421
Lamps, Portable Electric ... 74
Lamps, Ruling on Nitrogen Filled 45
Largest P. P. I. E. Exhibit ... 451
*Largest Submarine Power Cable, Laying The ... 1
†Law, Eight-Hour Labor ... 137
Law, The Constitutionality of the Idaho Public Utilities ... 58
*Laying the Largest Submarine Power Cable ... 1
Lead Storage Battery ... 576
League of Southern California, Jovian Electrical ... 16, 232, 301, 327, 349, 370, 459, 497, 518, 537
*Legal Problems, Irrigation Manager and his ... 95
†Legislation, Western Water ... 110
Letters That Win ... 477
Letters to the Editor ... 79, 106, 131, 320, 435, 528, 546
Letter to the Editor on Los Angeles Aqueduct Mistakes ... 435
Letter to the Editor on Municipal Ownership of Hydroelectric Power Plants ... 528
Letter to the Editor on Report of Inductive Interference Committee ... 546
Library of Petroleum Literature. 432
License Electrical Contractors, Seattle Would ... 182
*Light and Power Company, Key City ... 355
*Lighting, Amusement Park ... 128
‡*Lighting at the California State Fair ... 304
Lighting Burden, Municipal ... 106
*Lighting Campaign, The Fall ... 231
Lighting Department Cost Data, Criticism of Seattle ... 131
Lighting Methods .. 128. 343 379, 569
‡*Lighting, New Units for Ornamental Street ... 184
Lighting of Buildings, Outline ... 96
Lighting Report, Seattle ... 37
*Lighting—Street, Yesterday and Today ... 379
Lighting, Thirty-fifth Anniversary of Electric ... 349
Line, The Longest Power ... 170
Literature, A Library of Petroleum ... 432
Locomobile Power Plant, The Buckhorn ... 291
Load, Survey of Connected ... 473
Long Lake Development ... 218
Longest Power Line, The ... 170
Los Angeles Aqueduct Mistakes .. 388
Los Angeles Aqueduct Mistakes, Letters to the Editor On .. 435, 577
Los Angeles Section Am. Society Mech. Engineer ... 459

Page

Los Angeles Section of the Electric Vehicle Association of America 348, 558
Loveland, Answer to Col. H. D.. 79
Low Voltage Systems, Grounding the Neutral of..... 45
†Loyalty 298
Lumber Industry, Electricity in.. 274
‡Luminous Air Heater, El Radio, New 304
Luminous Organisms 193

M

Machinery Exhibits, P. P. I. E.59, 249
Magnetic Quality of Iron, The... 54
*Maintenance of Prices..... 533
†Maintenance of Prices..... 534
"Man, The Boss—The Job, The" 18
Management, Efficient Power Plant....102, 151, 177, 197, 229, 248
Management, The Three Types of 31
†Management, Types of..... 41
"Manual, Electricians' Wiring" 18
"Manual of California Securities and Directory of Directors, Walker's" 282
†Marine Possibilities, Diesel Engine .....
‡*Mazda Bees, The..... 352
Mazda Bureau Active in California Cities 328
‡Mazda Exhibit at California State Fair 304
‡*Mazda Journey, A..... 372
‡*Mazda Lamps, Benjamin Sockets for Type "C" 139
Mazda Publicity Bureau..... 205
*Measurements Due to Instrument Transformers, Errors in Power 129
Mechanical Engineers, Los Angeles Section American Society of 459
*Meet, Nevada Field..... 281
Meeting, Electrical Supply Jobbers' 318
Meeting Notices .....
....16, 43, 65, 89, 113, 159, 180, 232, 278, 300, 326, 348, 370, 392, 418, 442, 459, 476, 518, 536, 568, 586
Meeting of the A. I. E. E. and the N. E. L. A., Portland, Oregon—Joint 371, 418
Melting of Cathode Copper..... 198
†Mentally Dishonest Engineers... 40
Metal Output of California, The. 201
Metallic Resistance, The Elimination of 155
Meter Deposits 510
†Metric System 474
†Metering Travel 203
Methods, Lighting ..128, 343, 379, 569
Methods of Gas-testing, Standard 292
Mexican Turbine-Runner Cannon 54
Milkers, Electric 226
Mine Rescue Field Meet, Nevada First Aid and..... 180
‡*Miniature Transformer for All-Night Lamps 372
*Minidoka Reclamation Project, Operation of..... 25
‡Mirrortite, The..... 397
†Mistake, The Value of..... 441
Mistakes, Los Angeles Aqueduct. 388
‡*Modern Electrical Repair Shop, A 21
‡*Modern Fixture Factory at Portland 183
†Money, The Power of..... 277
Money, Power of..... 495
Monterey Gas Decision..... 34
Motor Application to Gold Dredges 275
Motor Delivery Vans..... 265
‡*Motor, New Century..... 352
‡*Motor on the Water Wagon..... 500
Motor Ship, An Oil..... 150
Motor Ship, The First Oil..... 131
"Motors, Electric"..... 282
‡*Motors, New Automatic Pressure Regulators for..... 522
†Movement, The "Safety First"... 367
Movies, Electrical Men Enjoy... 205
Moving Pictures, Use of for Engineering Purposes..... 484
*Multiple-Arched Dam, The Eastwood 49
Municipal Lighting Burden..... 106
Municipal Ownership of Hydroelectric Power Plants..... 528
Municipal Ownership Absurdity. 580
Municipal Ownership at Seattle. 579
Municipal Ownership of Water Works 578
†Municipal Ownership, Successful. 346
†Municipal Ownership, Wa" for.. 585
Municipal Ownership, What's Wrong With 504
Municipal Power Plant at Bangkok, Siam 531
*Municipal Railway, Substation for Seattle 447
*Municipal Railways of San Francisco, The..... 333
Municipal Utilities, Duplication by 341

Page

N

N. A. E. I., British Columbia Association of Electrical Inspectors—Section 159
N. A. E. I.—California Association of Electrical Inspectors, Section of 20, 45, 90
National Association of Stationary Engineers, Portland 459
National Convention Electrical Contractors 20
N. E. L. A. General Convention Committee 89, 180, 560
National Fire Protection Association 496
N. E. L. A., Portland, Oregon, Joint Meeting of the A. I. E. E. and the 371, 418, 537
National Forests and Their Protection, The Purposes of..... 437
†Near-Confiscation 277
Net Efficiency 266
Neutral of Low Voltage Systems, Grounding the 45
†Neutrality, The Benefits of..... 202
†Neutralizing Inductive Interference 475
*Nevada Field Meet 281
Nevada First Aid and Mine Rescue Field Meet 180
Nevada Irrigation Act, Constitutionality of the 1913..... 289
Nevada's Safety First Labor Day Exercises 256
‡*New Automatic Pressure Regulator for Starting and Stopping Small Motors 522
‡New Bryant Switch, A..... 282
‡New Caddy Call, A..... 184
‡*New Century Motor..... 352
New Catalogues .....
18, 65, 91, 116, 206, 235, 257, 304, 328, 352, 371, 395, 444, 499, 521, 562
‡*New Clamp 522
New Haven R. R.—An Appeal for Fair Play by..... 453
‡New Luminous Air Heater, El Radio 304
‡*New Oil Testing Set..... 396
‡*New Plant, Mathias Klein & Sons 117
*New Portland Station of A.D.T.Co. 525
New Radio Stations, Panama Canal 227
‡*New Station Insulator Switch, A. 329
‡*New Units for Ornamental Street Lighting 184
‡*New Weston Instrument Transformers 258
News of Arizona Corporation Commission .....
News of the California Railroad Commission .....
.....19, 44, 68, 91, 115, 159, 181, 233, 257, 280, 301, 328, 350, 393, 419, 443, 460, 478, 497, 519, 562
News of Idaho Public Utilities Commission .....
181, 301, 393, 419, 460, 497, 520, 561
News of the Oregon Railroad Commission ..19, 233, 460, 497, 561
News of Washington Public Service Commission.....
..... 207, 280, 301, 350, 443, 428
News Notes 23, 46, 69, 92, 118, 140, 163, 185, 210, 236, 259, 283, 305, 330, 353, 373, 398, 422, 445, 461, 480, 501, 523, 539, 561
ford R. R. An Appeal for Fair for R. R. An Appeal for Fair Play 453
Nitrate, Aluminum 342
Nitrates May Be Produced in United States 345
Nitrogen Filled Lamps, Ruling on 45
Nitrogen Lamp, The..... 342
Northwest, Business in the Pacific 176
†Northwest, Election Results in the 495
*N. W. E. L. & P. A. Convention, A. I. E. E. and.....272, 323
N. W. Electric Light and Power Association, Pacific Coast Convention A. I. E. E. and....113, 206
Notes, Electrical Contractors'.....
.....20, 45, 67
‡Novel Hydro-Pneumatic Equipment 282

O

Obituary:
Tedford, H. A..... 205
Sinclair, Henry H..... 256
Frink, John M..... 256
Felton, C. N..... 309
Quilty, Chas. W..... 309
Clement, Louis M..... 442
Seiler, Paul 459
Obligation to Serve.....470, 491
Oil Cargoes Through Panama Canal 453
‡*Oil Filter, Peterson..... 500
"Oil Fuel for Steam Boilers".... 18

Page

*Oil, Fuel—Industrial Uses of.....
.....425, 454, 469, 486, 507, 530, 550
Oil Motor Ship, An..... 150
Oil Motor Ship, The First..... 131
Oil, Pumping California..... 104
Oil, Smokeless Combustion of... 451
Oil, Steam for Atomizing..... 11
Oil Storage Tank, An..... 11
Oil Strainers, Fuel..... 13
‡*Oil Testing Set—New..... 396
Oil, The Density of..... 5
Oil Well, Electric Lamps for.... 270
*Oil Wells, Automatic Electric Operation of 75
Oil Wells, Electric Pumping of.. 78
*Oils, A Study of Transformer... 224
‡*Operation Brass Shell Sockets, Push Button 22
Operating Conditions in 150,000 Volt Transmission 273
*Operation of Minidoka Reclamation Project 25
*Operation of Oil Wells, Automatic Electric 75
Operation of 55,000 Volt Insulators, Economy in..... 275
Operators, Electrical 547
†Opportunities, Our Industrial.... 391
Opposition to Rulings on Overhead Line Construction in Idaho 559
Oregon Electrical Contractors' Association 578, 552
Ordinance at Salt Lake City Electric Sign 90
Ordinances, Oregon Electrical... 45
Oregon—U. S. Geological Survey Work In 389
Oregon Electrical Ordinances:.. 45
Oregon Hydroelectric Commission Report 5
Oregon Hydroelectric Commission's Request for Foreign Hydroelectric Data, The..... 168
Oregon Hydroelectric Conference 537
Oregon Hydroelectric Conference. 581
Oregon, Hydroelectric Problem In 581
Oregon Irrigation Congress..518, 586
Oregon Railroad Commission, News of the....19, 233, 460, 497, 561
Oregon Society Engineers .....
.....387, 348, 370, 419, 443, 459, 496, 518, 536. 558
Oregon Underwriters' Bureau on Grounding Secondaries 182
Oregon Water Code, The Constitutionality of the 409
*Oregon's Water Resources, Development of 464
Organisms, Luminous 193
‡*Ornamental Street Lighting, New Units for 184
†Our Industrial Opportunities..... 391
Outdoor Substations 272
Outlet Boxes and Plates in Knob and Tube Construction 138
Outline Lighting of Buildings... 90
Output of California, The Metal.. 201
Overhead Line Construction, Opposition to Rulings on in Idaho 559
‡*Overload Relays 139
†Ownership, Successful Municipal. 346

P

Pacific Claim Agents' Association 89
Pacific Claim Agents' Convention 65
Pacific Coast Convention A. I. E. E. and N. W. Electric Light and Power Association....113, 296
Pacific Coast Electric Power Development 272
Pacific Coast Gas Association Convention 206, 302, 479
Pacific Gas and Electric Tennis Tournament 182
Pacific Light & Power 150,000 Volt Transmission..... 273
Pacific Northwest, Business in the 176
Pageant at Salt Lake City, Electrical! 233
†Page, Turning the 584
Panama Canal New Radio Stations 227
Panama Canal—Oil Cargoes Through 453
Panama Canal Power Supply.... 549
Panama Canal, Time Saved by the 342
Panama Canal Toll 77
Panama Canal, Transportation Telephone System 485
*P. P. I. E. Engineering Constructional Features 307
P. P. I. E. Exhibit, Bureau of Mines' 201
*P. P. I. E. Exhibit, First..... 249
P. P. I. E. Exhibit, The Largest. 451
P. P. I. E. Exhibits 453
P. P. I. E. Foreign Participation, Increased 302
P. P. I. E. Gas Exhibit..... 444
*P. P. I. E. Gas Exhibit..... 484

P. P. I. E. Machinery Exhibits.59, 249
*Paper Pipes for Drying Plants.. 515
*Park Lighting, Amusement..... 128
†Partnership Relations, Service.. 203
Patents a Profitable Field..... 366
†Peaceful War, Promoting Our.. 157
Penetrating Power of an X-Ray Tube 439
Personals 16, 42, 64, 88, 112, 138, 158, 180, 204, 232, 256, 278, 300, 326, 348, 370, 392, 418, 442, 458, 476, 496, 518, 536, 558
‡Peterson Oil Filter..... 500
Petroleum Literature, A Library of 432
Phosphates in Idaho..... 345
Photographing Blueprints 225
*Photometry, Arc Lamp.....343, 569
Pictures, Moving—Use of for Engineering Purposes 484
*Pipes, Paper—For Drying Plants 515
Plant Growth, Electrical Stimulation of 155
*Plant, Homestake Hydroelectric Power 189
Plant Management, Efficient Power..102, 151, 177, 197, 229, 248
‡*Plant, Mathias Klein & Sons' New 117
Plant, The Buckhorn Locomobile Power 291
Plants, Chinese Electric Light.. 275
Plants of Japan, Hydroelectric.. 150
†Plowing, Electric 87
†Point of View, The 299
†Police Inefficiency 557
Policy of Public Utility Corporations, Public 60, 83, 341
Policy, Public 293
Port Townsend, Wash..... 355
Portable Electric Lamps..... 74
*Portland—Arch Illumination at.. 503
*Portland, Electric Floats at.... 52
‡*Portland, Modern Fixture Factory at 188
Portland National Association of Stationary Engineers 459
Portland, New Electrical Code at 90
Portland, Oregon, Joint Meeting at the A. I. E. E., and the N. E. L. A. 371, 418
Portland, Oregon, Joint Pole Commission 349
†Possibilities, Diesel Engine Marine 136
Potash From Feldspar..... 409
*Power Cable, Laying the Largest Submarine 1
Power, California's Hydroelectric 168
Power Club, Electric..... 43
Power Company, Efficiency Engineering for a..... 102
*Power Company, Key City Light and 355
Power Development on Pacific Coast 272
Power Line, The Longest..... 170
*Power Measurements Due to Instrument Transformers, Errors in 129
†Power of Money, The..... 277
†Power of Money 495
Power on the Witwatersrand, Electric 170
Power Outlook at Arrow Rock Reservoir 226
*Power Plant, Homestake Hydroelectric 189
Power Plant Management, Efficient.....102, 151, 177, 197, 229, 248
Power Plant, Municipal at Bangkok, Siam 531
Power Plants, Municipal Ownership of Hydroelectric..... 528
Power Plant, The Buckhorn Locomobile 291
Power Purposes, Distribution System for 274
Power Supply, Panama Canal.... 549
†Power, The Balance of..... 276
Praise of "The Multiple Arch Dam" 80
†Prayers, Water Wheel..... 63
*Present Value of Public Properties 403
Preservation, Timber 38
‡*Pressure Regulator, New Automatic for Starting and Stopping Motors 522
†Price Cutting, Evils Of 585
Price Maintenance 533
†Price Maintenance 534
Principal and Agent, The Doctrine of 177
Principles, Code of, Adopted by Am. Railway Association..... 455
†Private Ownership, What Was Wrong With 517
Problem, The Telephone..60, 83, 108
*Problems, Irrigation Manager and His Legal 95
Process, The Cottrell 196
Producer Gas from Wood..... 472
Production of Ferro-Manganese, Electric 342
Profitable Field, Patents a..... 366
*Progress in the Gas Industry.... 263
*Project, Operation of Minidoka Reclamation 25
*Project, The Wapato Lake Drainage 239
†Promoting Our Peaceful War.... 157
Propulsion, Electric 468
Protection of National Forests and the Purposes of..... 437
Public Enemies 342
Public Lands in Relation to Irrigation, Hydroelectric Developments on 100
Public Policy 293
Public Policy of Public Utility Corporations 60, 83, 341
†Public, Teaching the..... 111
Public Service Commission, News of Washington 207, 280, 301, 350, 443, 478
Public Utilities Commission, News of Idaho 181, 301, 393, 419, 460, 497, 520, 561
Public Utilities Law, The Constitutionality of the Idaho..... 58
†Public Utility Ethics..... 456
*Public Utility Properties, Present Value of..... 403
†Public Utility, What Constitutes 475
Publicity Bureau, Mazda..... 205
Publications Received.....19, 139, 372, 395, 420, 520
Pumping California Oil..... 104
Pumping of Oil Wells, Electric.. 78
*Pumping Plant, Diesel Engine.. 537
Purposes of National Forests and Their Protection..... 437
‡*Push Button Operated Brass Shell Sockets 22
*Portland Station of A. D. T. Co.. 525

R

Radio Experts Wanted 139
Radio Stations, Panama Canal Law 227
Radium, X-Rays are Displacing. 82
Railroad Commission News of Arizona 350
Railroad Commission, News of California 19, 44, 68, 91, 115, 159, 181, 233, 257, 280, 301, 328, 350, 393, 419, 443, 460, 478, 497, 519, 562
Railroad Commission, News of the Oregon 19, 233, 460, 497, 561
Railway Company, Appliance Sale by Utah Light and..... 7
*Railway Extensions, San Diego Electric 285
*Railway, Substation for Seattle Municipal 447
Railways, Cash Investment of the 52
*Railways of San Francisco, The Municipal 333
Rate Case, Antioch 38
*Rate Making Schedules, Co-operative 121
Rate Regulation in California Cities 473
Rate Theories, A Resume and Comparison of.....357, 384
Rate Theories—Discussion of.... 387
*Reclamation Project, Operation of Minidoka 25
†Record Breaker, Another..... 14
Record in Freght Haulage, A World's 168
‡*Reflectors for New High Efficiency Mazda Lamps 421
Registration at Spokane Convention 278
†Regulation 86
Regulation, Rate in California Cities 473
Rejuvenation, Jovian 161
Relation of the Electrical Contractor to the Central Station. 553
†Relations, Service Partnership... 203
‡*Relays, Overload 139
‡*Repair Shop, A Modern Electrical 21
Repairing Troubles, Time in.... 367
Report of Washington Water Code Commission 455
Report on Inductive Interference 250, 269
Report on Inductice Interference 320
Letter on Inductive Interference 414
Report, Oregon Hydroelectric Commission 5
Report, Seattle Lighting..... 37
Reservoir, Power Outlook at Arrow Rock 226
Residence Service Campaign.... 2
Resistance, The Elimination of Metallic 155
Resistance Ceases, Electrical.... 361
Resistance of Electric Car, Traction 33
Resources, Tungsten 317
Resources, Water Power Conservation of Western..... 555
†Results, Election—In the Northwest 495
Resume and Comparison of Rate Theories, A.....357, 384
Resume of Diesel Engine Installations 133
Resuscitation, Rules for..... 439
‡*Reversing Switches, New—For Squirrel Cage Motors..... 397
†Room for All..... 255
Rosario—Advertising Electricity at 493
"Roster of the Jovian Order".. 113
Rubber, Synthetic 549
Rules, A. I. E. E. Standardization 85
Rules, Electrical Safety..... 199
Rules, Safety 126
†Rule, Utility Home 369
Rules for Resuscitation 439
Ruling of San Francisco Department of Electricity..... 371
Ruling on Nitrogen Filled Lamps 45
Ruling San Francisco Department of Electricity 68
Rulings on Overhead Line Construction in Idaho, Opposition to 559

S

Sacramento, Contractors' Convention at 114
*Sacramento, Contractors' Convention at 160
Sacrametno Jovian League...300, 326
†Safety First 137
Safety First at Salt Lake City... 169
Safety First Labor Day Exercises, Nevada's 256
†"Safety First" Movement, The.... 367
Safety Rules 126
Safety Rules, Electrical..... 199
Sale by Utah Lignt and Railway Company, Appliance..... 7
Sales Work by Jobbers, Creative. 318
†Salesmanship, Scientific..... 494
Salt Lake City, Electric Sign Ordinance at 90
Salt Lake City Electrical Contractors 113
Salt Lake City, Electrical Pageant at 233
Salt Lake City, Safety First at.. 159
‡*Sample Room, Contractors'..... 351
*San Diego, Electric Distribution Standards in 143, 171, 194, 228, 243, 268, 297, 315, 339, 362, 382, 408, 433, 452, 467, 490
*San Diego Electric Railway Extensions 285
San Francisco Department of Electricity, Ruling 68
San Francisco Department of Electricity, Ruling of..... 371
San Francisco Electrical Development and Jovian League..... .....232, 300, 327, 349, 563
San Francisco, Engineers' Club of 89, 232, 279, 327, 442
San Francisco Jovians 279
San Francisco—The Meeting of Convention at 381
San Francisco N. E. L. A. Convention Committee 180
San Francisco 1915 A. I. E. E. Meeting 583
San Francisco Section A. I. E. E. 300
San Francisco Section Electric Vehicle Association of America 301
San Francisco Section A. S. M. E. 518
*San Francisco, The Municipal Railways of 333
*San Francisco, The Water Supply of 165
*Schedules, Co-operative Rate Making 121
†Sea, the Water That Goes Down to the 14
Seasoning of Timber, Electrical.. 77
Seattle Lighting Department Cost Data, Criticism of 131
Seattle Lighting Report..... 37
Seattle, Municipal Ownership At. 579
Seattle Municipal R'ys—Double Trolley System of..... 493
*Seattle Municipal Ry., Substation for 447
Seattle Section, A. I. E. E....370, 418
†Seattle Steam Heat Situation.... 230
Seattle Would License Electrical Contractors 182
*Seattle's Central Fire Alarm System 401
Secondaries, Oregon Underwriters' Bureau on Grounding..... 182
Section of the A. I. E. E., Southern California..... 348
Selling Electric Service..... 31
‡*Semaphore, Electric..... 522
Serve, Obligations to 470, 491
Service Campaign, Residence.... 2
†Service Connections 137
†Service Partnership Relations.... 203
Service, Selling Electric..... 31
Settlers, Facts for..... 436
†Scientific Salesmanship..... 494

Page

Shanghai, Telephone Service at.. 248
Shanghai, Trolley Busses at..... 529
‡*Shell Sockets, Push Button Operated Brass 22
Ship, The First Oil Motor..... 131
‡*Shop, A Modern Electrical Repair 21
†Simpler Symbols 347
†Situation, Seattle Steam Heat... 230
Smokeless Combustion of Oil... 451
Snake River Basin, Water Power Surveys in 453
‡*Sockets for Type "C" Mazda Lamps, Benjamin..... 139
Society for Electrical Development, Los Angeles Members of. 537
‡*Sockets, Push Button Operated Brass Shell 22
Some Ethics of the Telephone... 303
Sounds, Continuous Sustained.... 86
*Source of Sustained High Voltage at High Frequency, A Laboratory 8
Southern California Section of the A. I. E. E.....348, 558
Southern California, Jovian Electrical League of....16, 232, 301, 327, 349, 370, 459, 497, 518, 537, 559
Southwestern Electrical and Gas Association, The..... 113
†Specialization, Thoroughness vs. 231
†Specification, The Injury of the Ideal 156
Spokane Convention, Registration at 278
Standard Methods of Gas-testing. 292
*Standards for Gas Service in the West 376, 410
*Standards in San Diego, Electric Distribution 167, 143, 171, 194, 228, 242, 268, 297, 315, 339, 362, 408, 382, 433, 452, 467, 490
Standardization in China, Electrical 155
Standardization Rules, A. I. E. E. 85
†Standards, Efficiency 299
†Standards for Gas Service..... 390
*Standards for Gas.....376, 410
State Business, Development Of. 582
†State Control, Federal versus.... 178
‡*State Fair, Lighting at the California 304
‡State Fair, Mazda Exhibit at California 304
Stationary Engineers, National Association of, Portland..... 459
Stations, Panama Canal New Radio 227
Steam and Diesel Units, Comparison of 169
Steam Boiler Explosions 345
"Steam Boilers, Oil Fuel for".... 18
Steam for Atomizing Oil..... 11
†Steam Heat Situation, Seattle.. 230
"Steam, Thermal Properties of".. 420
Steel Belt, The..... 201
Sterilization of Water..... 177
Stimulation of Plant Growth, Electrical 155
Storage Batteries 571
Storage Tank, An Oil..... 11
‡*Strain Insulator Switch, A New.. 329
Strainers, Fuel Oil..... 13
‡*Street Ligthing, New Units for Ornamental 184
*Street Lighting—Yesterday and Today 379
‡*Street Traffic, Electric Semaphore for 522
*Stresses, Analysis of Arch Dam... 4
Structures for Irrigation Canals, Gate 85
Structure of the Atom..... 515
*Study of Transformer Oils, A.... 224
*Submarine Power Cable, Laying the Largest 1
*Substation for Seattle Municipal Railway 447
Substations, Outdoor 272
Successful Contracting, Elements of 208, 234
†Successful Municipal Ownership.. 346
Suggestions for Estimating Sheet 395
Suit, Utah Company Loses Government 39
Supplementary Transportation, A System of 85
Supply Jobbers' Meeting, Electrical 318
†Surge Control 456
Survey of Connected Load 473
Survey Work—U. S. Geological Survey, in..... 389
Surveys in Snake River Basin, Water Power 453
*Sustained High-Frequency High Voltage, Experiments With... 57
*Sustained High Voltage at High Frequency, A Laboratory Source of 8
Sustained Sounds, Continuous... 85
‡*Switch, A New Strain Insulator. 329
‡Switch, A New Bryant..... 282
‡*Switches, New Reversing, for Squirrel Cage Motors..... 397

Page

†Smybols, Simpler 347
Synthetic Rubber..... 549
System of Supplementary Transportation, A..... 85
*System of Washington Water Power Company 213
Systems, Grounding the Neutral of Low Voltage..... 45

T

Tank, An Oil Storage..... 11
†Teaching the Public..... 111
†Technical Conventions, The Exposition 324
Telephone, A Kite Wire..... 32
*Telephone Plant With Relation to Fires, The..... 428
Telephone Problem, The....60, 83, 108
Telephone Service at Shanghai.. 248
Telephone, Some Ethics of the.. 303
Telephone System, Canal Transportation 485
Telephone, Under-water..... 148
Telephones, Wireless for Train Service 510
Telescribe, The 342
"Televista," The 11
Telluride Association 65
Tennis Tournament, Pacific Gas and Electric 182
‡*Testing Transformers Shipped to Japan 258
†Thanks-Giving 494
"The Job, The Man, The Boss".. 18
Theories, A Resume and Comparison of Rate 357, 384
"Thermal Properties of Steam".. 420
*Thermo-Relay, The .....
†Thoroughness vs. Specialization.. 231
Three Types of Management, The 31
Timber, Electrical Seasoning of.. 77
Timber Preservation 38
Time in Repairing Troubles..... 367
Time Saved by the Panama Canal 342
Toll, Panama Canal 77
‡Torque Compensators 396
Total Heating Value of a Gas... 407
Tournament, Pacific Gas and Electric Tennis 182
Traction Resistance of Electric Car 33
Trade Notes 17, 44, 68, 91, 115, 138, 182, 207, 233, 257, 280, 302, 328, 329, 350, 371, 420, 444, 478, 499, 520, 538, 563
Train Service, Wireless Telephone for 510
‡*Transformer for All-Night Lamps, Miniature 372
*Transformer Oils, A Study of.... 224
Transformer Wave Shapes, Effect of Connections on 273
*Transformers, Errors in Power Measurements Due to Instrument 129
*Transformer, Installation of High Voltage 514
‡*Transformers, New Weston Instrument 258
‡*Transformers Shipped to Japan, Testing 258
Transmission at 150,000 Volts... 273
*Transmission, History of Electrical 71, 104, 126, 148
Transportation, A System of Supplementary 85
†Travel, Metering 203
Travel, The Cost of Gasoline Car. 80
†Treating Boilers 557
Trolley Busses at Shanghai..... 529
Troubles, Time in Repairing.... 367
Tungsten Resources..... 317
Turbine-Runner Cannon, Mexican 54
†Turning the Page 584
‡*Type "C" Mazda Lamps, Benjamin Sockets for 139
†Types of Management 41
Types of Management, The Three 31

U

Under-Water Talk 148
Underwriters' Bureau on Grounding Secondaries, Oregon..... 182
Union Pacific R. R.—Wireless Telephone for Train Service on. 510
United Light & Power Co..... 491
United States, Nitrates May Be Produced in 345
U. S. Government Exhibit, The... 104
U. S. Geological Survey Work in Oregon 389
U. S. Steel Products Co..... 451
Units, Comparison of Steam and Diesel 169
‡*Units for Ornamental Street Lighting, New 184
Use of Moving Pictures for Engineering Purposes..... 484
Utah Company Loses Government Suit 39

Page

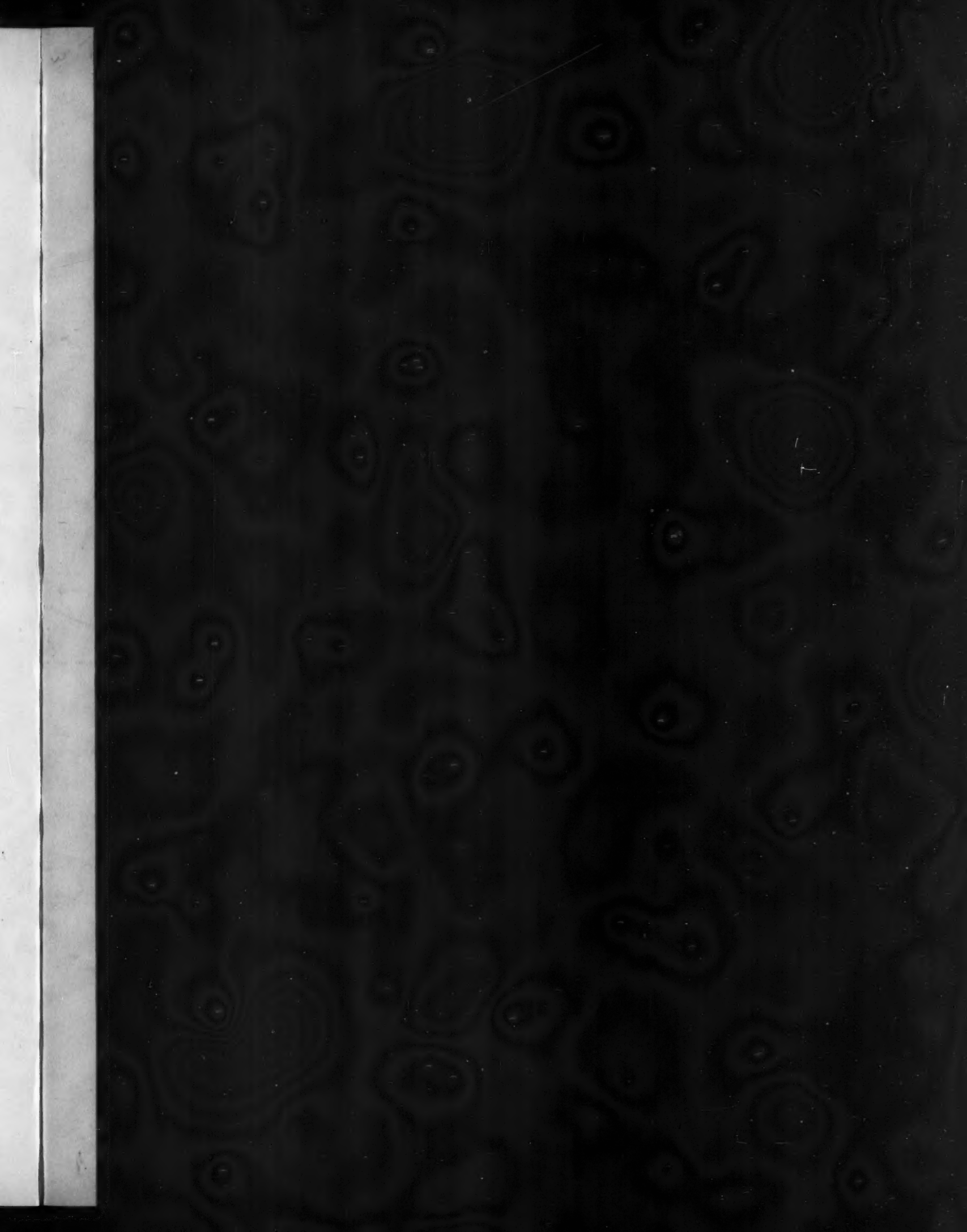
Utah Electric Club.....349, 419, 496
Utah Electric Show Association.. 65
Utah, Electrical Irrigation in.... 39
Utah Light and Railway Company, Appliance Sale by..... 7
Utah Light and Railway Company Sold, The 321
Utah Society of Engineers..... 518
Utilities Commission, News of Idaho Public 181, 301
Utilities, How Commissions Regard 11
Utilities, Duplication by Municipal 341
Utilities Law, The Constitutionality of the Idaho Public..... 58
Utility Corporations, Public Policy of Public 60, 83, 341
†Utility Cost Accounting 324
†Utility Home Rule 369
†Utility, Public, What Constitutes a 475
†Utilization, The Futility of Water 178

V

†Value of a Mistake..... 441
*Value of Public Utility Properties, Present 403
Vans, Motor Delivery 265
Vehicle Association, Electric 43
†View, The Point of 299
*Voltage at High Frequency, A Laboratory Source of Sustained High 8

W

"Walker's Manual of California Securities and Directory of Directors" 282
Wanted, Radio Experts 139
*Wapato Lake Drainage Project, The 239
War, Electrical Industry and the 290
†War for Municipal Ownership... 585
†War, Promoting Our Peaceful... 157
Washington Public Service Commissions, News of..... .....207, 280, 301, 350, 443, 478
Washington Water Code Commission, Report of..... 455
*Washington Water Power Company, System of..... 213
Wass Hael 419, 538, 588
Waste of Water in Irrigation, The 104
Water, An "Appropriator" of.... 132
Water Discharge, Chemical Gaging of 292
Water in Irrigation, The Waste of 104
†Water Legislation, Western..... 110
Water Power Resources, Conservation of Western..... 555
Water Works, Municipal Ownership Of 578
Western Water Power Resources Conservation of 555
Water Power Exhibit, A Canadian 155
Water Power Surveys, in Snake River Basin 453
*Water Resources, Development of Oregon's 464
Water Rights, Aqueduct 513
Water, Sterilization of 177
*Water Supply of San Francisco, The 165
†Water That Goes Down to the Sea, The 14
†Water Utilization, The Futility of 178
‡*Water Wagon—Motor on the..... 500
†Water Wheel Prayers..... 63
Water Wheels, Efficiency of..... 551
†What Was Wrong With Private Ownership 517
Welding, Electric 32
†Welfare Work 157
Well, Electric Lamps for Oil..... 270
†Western Water Legislation..... 110
‡*Weston Instrument Transformers, New 258
†What Is the Effect 254
What's Wrong With Municipal Ownership 504
†Will, Capitalization of Good..... 15
‡*Wire Clamp 522
Wireless Telephone for Train Service 510
Wire Table, How to Remember.. 434
Wire Telephone, A Kite..... 32
"Wiring Manual, Electricians'". 18
Witwatersrand, Electric Power on the 170
Wood, Producer Gas from..... 472
†Work, Welfare 157
World's Record in Freght Haulage, A 168

X

X-Rays Are Displacing Radium.. 82
X-Ray Tube, The Penetrating Power of 439